

# Marijuana

## *The Rest of the Story*



Iowa Office of Drug Control Policy  
August 2015

# Important Distinctions

---

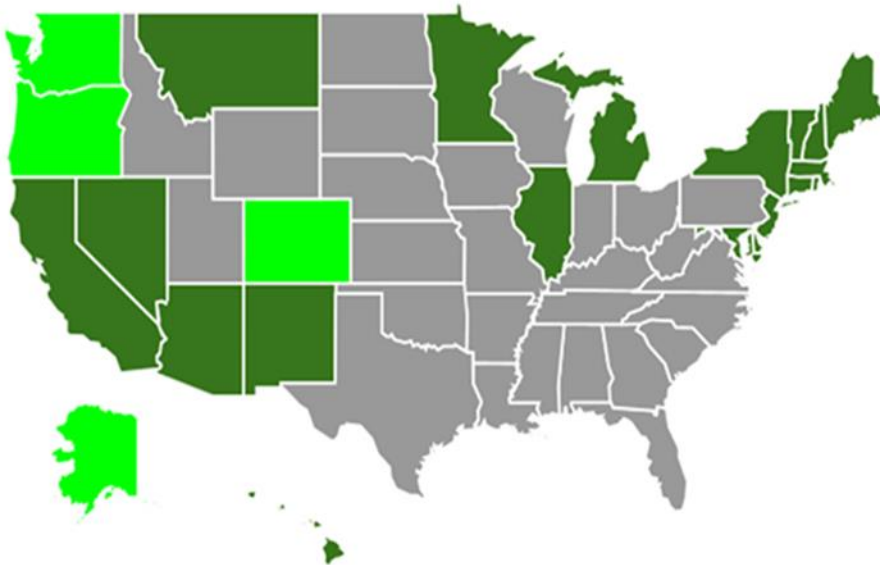
The Office of Drug Control Policy supports safe & effective research-based medicines, including qualified cannabis *derivatives*, for use by health care professionals to treat patients with valid medical need, & that do not compromise Iowans' health & public safety.

Rigorous research is needed to safely & effectively help those in need without putting others at risk. Cannabis extracts are being isolated for FDA-authorized testing of potential medicines.

Iowa law permits regulated use of *non-psychoactive* CBD oil to treat intractable epilepsy, similar to a product in FDA clinical trials at Iowa City & other sites. States with “medical” marijuana laws allow broader use for multiple conditions with fewer controls.

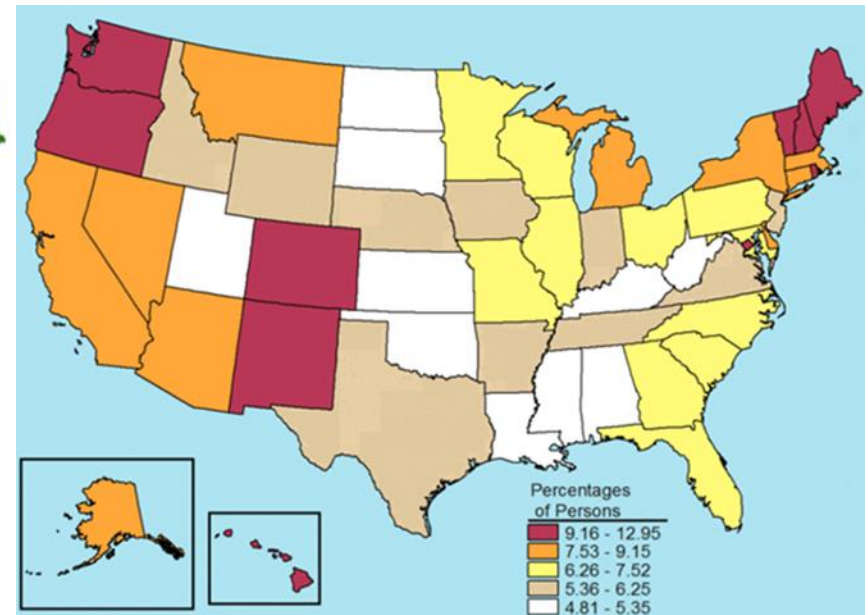
## by State

(2015 Governing.com)



Dark Green = “Medical” marijuana (23 & DC...1996-2014)  
 Light Green = “Medical” & “Personal” marijuana (4...2012-2014)  
 Not Shown: Low THC non-psychoactive “CBD” oils (16...2014-2015)

(2012-2013 NSDUH)



# Other Legal Developments

---

- Buyer's remorse? Over 200 communities in California, 180 in Colorado & others elsewhere have enacted local bans on “medical” or “recreational” marijuana sales, & numbers are growing.
- Federal law enforcement has cracked down in California, closing up to 600 “medical marijuana” dispensaries for violating federal controlled substance laws or state laws re: nonprofits, caregivers, medical use, etc. Similar raids have been conducted in Colorado.
- Lawsuits & court challenges are pending regarding jurisdictional authority, workplace rights, etc.

# Scientific Positions on Marijuana

---

- The FDA has not approved the use of marijuana as medicine, saying “there is currently sound evidence that smoked marijuana is harmful.”
- The Institute of Medicine has declared smoking marijuana is unsafe, & “marijuana is not modern medicine.”
- The National Institute on Drug Abuse reports “marijuana is addictive,” with nearly 4.5 million Americans meeting the clinical criteria for marijuana abuse or dependence.

# Health Group Positions on Marijuana

- Major public health organizations (American Cancer Society, American Glaucoma Foundation, American Medical Association, American Psychiatric Association, National Pain Foundation, National Multiple Sclerosis Society, National Association of School Nurses, et al.) do not support smoked marijuana.



- The American Academy of Pediatrics “opposes marijuana use by children & adolescents...the use of ‘medical’ marijuana outside the regulatory process of the FDA...&...legalization of marijuana.”

# Marijuana Health Effects

---

- Marijuana can: cause or worsen respiratory symptoms; impair short-term memory & motor coordination; slow reaction time; distort perceptions; raise heart rate; disrupt problem solving & learning ability; alter mood, judgment & decision-making; & in some people cause severe anxiety or psychosis.

2012 National Institute on Drug Abuse, NIH, Drug Facts

- More U.S. citizens met the American Psychiatric Association's diagnostic criteria for marijuana abuse or dependence than for pain relievers, cocaine, tranquilizers, hallucinogens & heroin combined.

2011 U.S. Substance Abuse & Mental Health Services Administration, National Survey on Drug Use & Health

# Marijuana Health Effects

---

- Marijuana is addictive. About 9% of users become addicted. That number increases to 1 in 6 among users who start in adolescence, & to 25-50% among those who use marijuana daily. 2014 National Institute on Drug Abuse
- Regular daily users of high-potency marijuana (~16% THC), similar to forms increasingly found in the U.S., are 5 times more likely than non-users to have a psychotic disorder. Weekend users are 3 times as likely to suffer a psychotic episode. 2015 The Lancet Psychiatry, Kings College London
- Preliminary research finds breathing 2<sup>nd</sup>-hand marijuana smoke could damage your heart & blood vessels as much as 2<sup>nd</sup>-hand cigarette smoke. 2014 American Heart Association's Scientific Sessions



# Marijuana's Makeup

---

- Marijuana contains more than 100 chemicals, known as *cannabinoids*. Currently, the two main compounds of interest for potential therapeutic use are *tetrahydrocannabinol (THC)* & *cannabidiol (CBD)*, found in varying ratios in the cannabis plant.
- THC is the main psychoactive ingredient. Some THC-based medications are FDA-approved for stimulating appetite & reducing nausea. It may also decrease pain, inflammation & spasticity. THC also leads to mind-altering experiences, impairment, abuse & addiction.
- CBD is a non-psychoactive ingredient that may be useful in reducing pain & inflammation, controlling epileptic seizures, & possibly even treating psychosis & addictions.

# Other Names for Marijuana/Cannabis

---

## Then

- ▶ Weed
- ▶ Grass
- ▶ Pot
- ▶ Reefer
- ▶ Hash
- ▶ Hemp
- ▶ Joints
- ▶ Blunts
- ▶ Buds

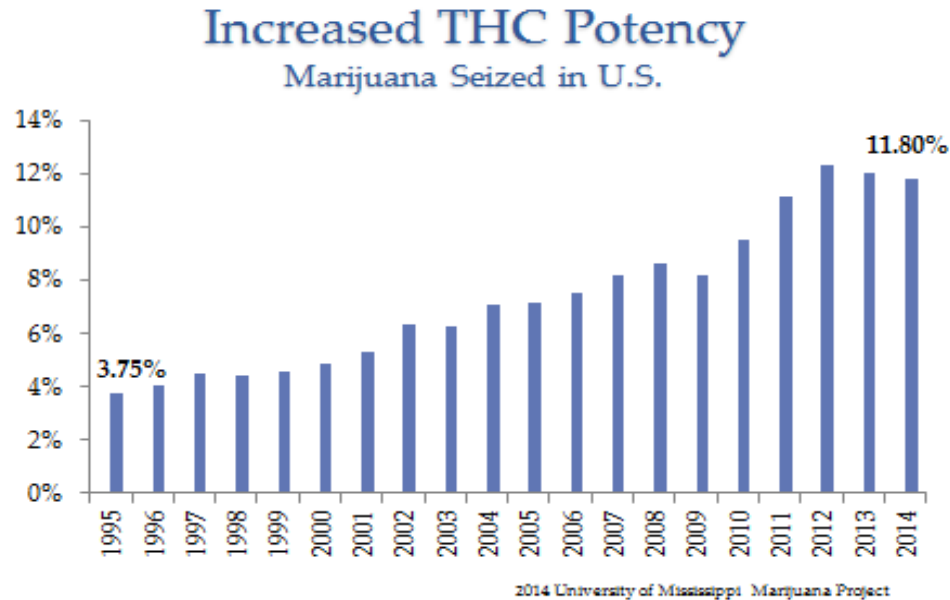
## Now

- ▶ Hash Oil
- ▶ Honey Oil
- ▶ Wax
- ▶ Earwax
- ▶ Budder
- ▶ Crumble
- ▶ Shatter
- ▶ Black Glass
- ▶ Edibles

# Marijuana & Health

- Average marijuana THC potency rose to 11.8% in 2014, up from 3.75% in 1995. THC potency was less than 1% in 1972.

December 15, 2014 University of Mississippi Marijuana Project

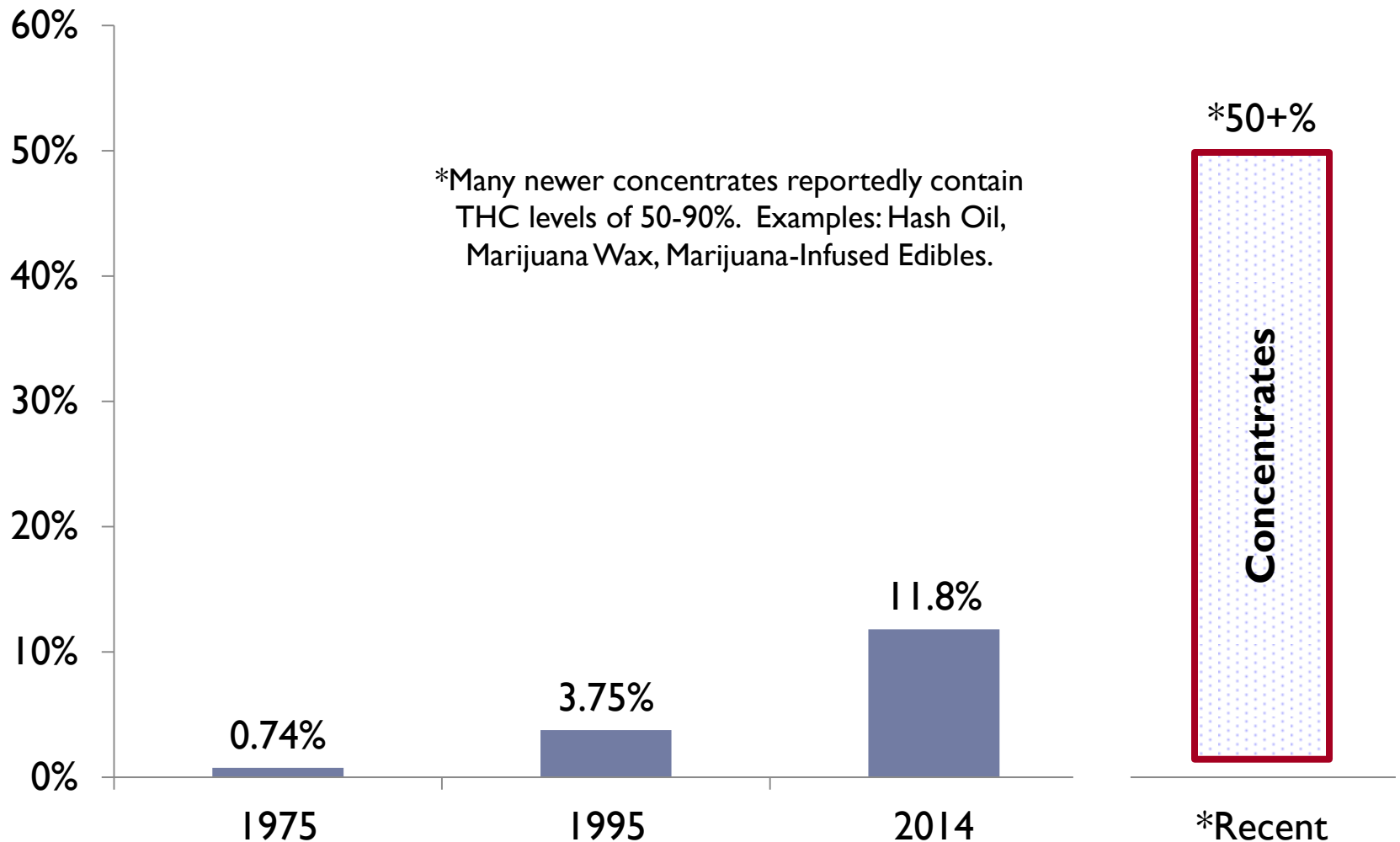


- Some new marijuana concentrates (e.g., hash oils, waxes & edibles) reportedly contain THC levels in excess of 80%.

2014 U.S. Department of Justice, Drug Enforcement Administration, National Drug Threat Assessment Summary

# Marijuana's Increasing Potency

U.S. Seizures, Concentration of THC by % of Weight



National Institute on Drug Abuse & U.S. Drug Enforcement Administration

# Marijuana Concentrates

---

## Hash Oil (aka: honey oil or 7:10)



Chemically extracted from cannabis plant with solvent. Produces amber or brown colored viscous liquid. One or two drops = one “joint.” Often used in vape devices. THC estimate: 40-80%.



## Wax (aka: budder, crumble, earwax)



Created by whipping hash oil during THC extraction. Results in a consistency similar to earwax. “Dabbing” is inhaling vapor from wax on a heated surface. THC estimate: 50-80%.

# Marijuana Concentrates

---

## Shatter



Yellow or amber colored thin & brittle cake made in multiple steps that involve a pressure vacuum.

THC estimate: May exceed 80-90%.

## Edibles



Delayed effects of marijuana-infused foods (e.g., brownies, suckers, peanut butter, gummy chews, drinks, etc.) on unsuspecting users—particularly children drawn to product packaging—can lead to psychotic episodes & other dangers.

THC estimate: 50% or higher.



# Marijuana Concentrates

---

## Vaping



Many users of marijuana concentrates prefer smokeless, odorless e-cigarette or vape device delivery systems. “Vaping” is fast-acting & easy to conceal, a concern in schools & among youth generally.

## BHO Labs (Butane Honey Oil labs)



THC extraction labs (aka BHO labs, due to the use of butane for hash/honey oil extraction) are on the rise...in Iowa too. One byproduct is more lab-related explosions, fires & personal injuries.



# Marijuana Concentrates

---

Regular daily users of high-potency marijuana (~16% THC), similar to forms found in the U.S., are 5 times more likely than non-users to have a psychotic disorder. Weekend users are 3 times as likely to suffer psychosis. 2015 Lancet Psychiatry, Kings College London



“2 deaths connected with edible marijuana products have Colorado lawmakers scrambling to toughen regulations & experts warning of bizarre behavior as consumers eat powerful pot-infused foods.”

May 8, 2014 USA Today

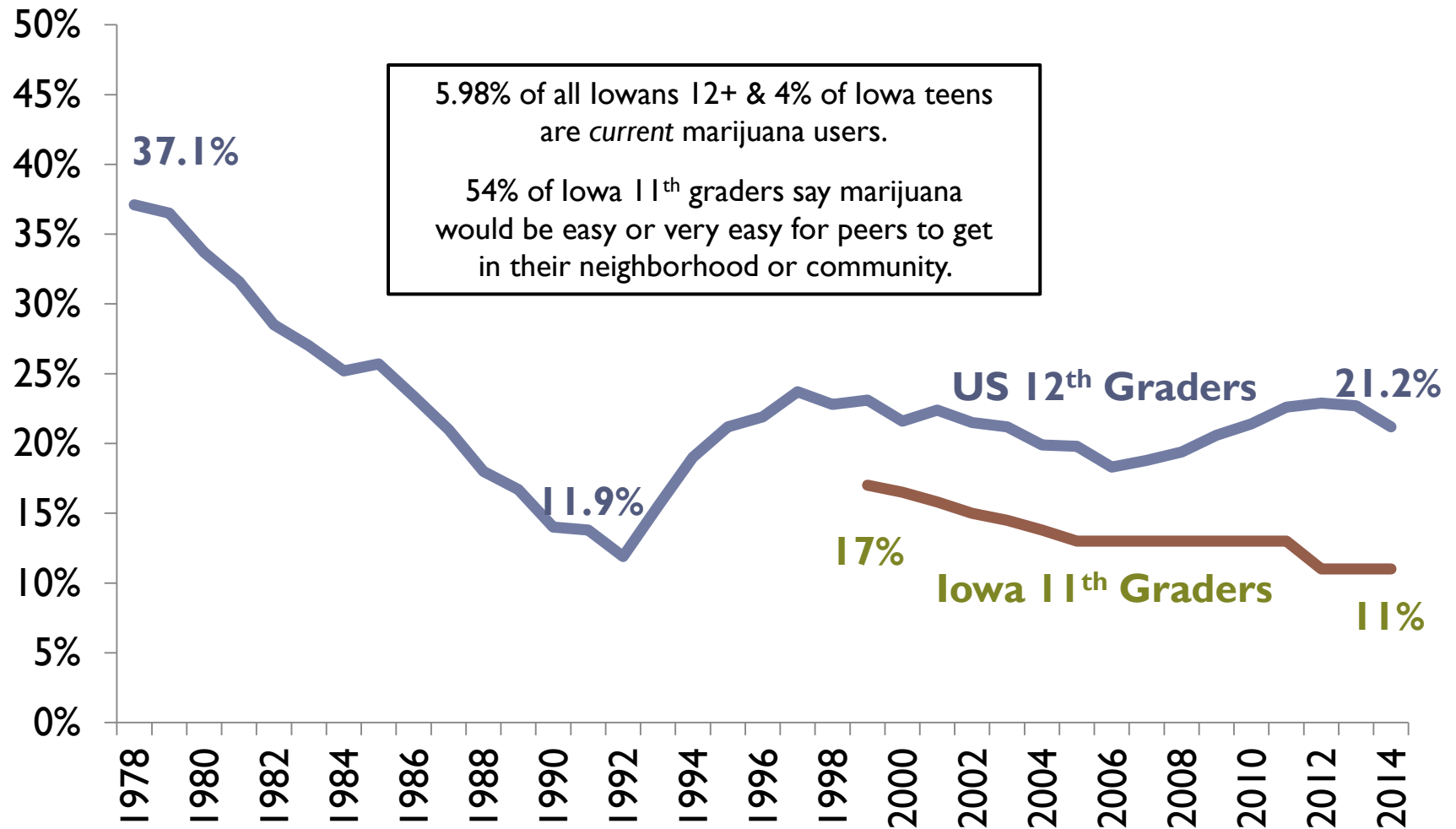
The self-inflicted shooting death of a 22-year old Oklahoma man on a family ski trip in Colorado is blamed on 4 marijuana gummy bears. March 26, 2015 Denver Post





# Current Youth Marijuana Use

Past 30 Days: U.S. vs. Iowa

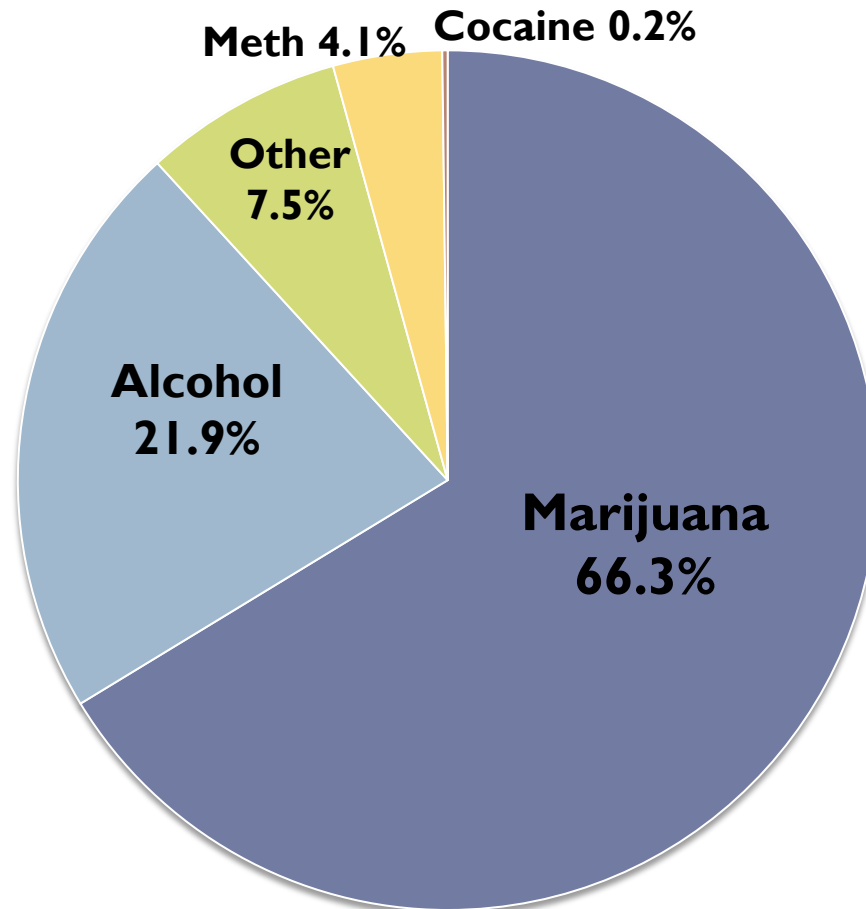


2014 Monitoring the Future Survey & 2014 Iowa Youth Survey (available data)



# Drugs of Choice: Iowa Youth

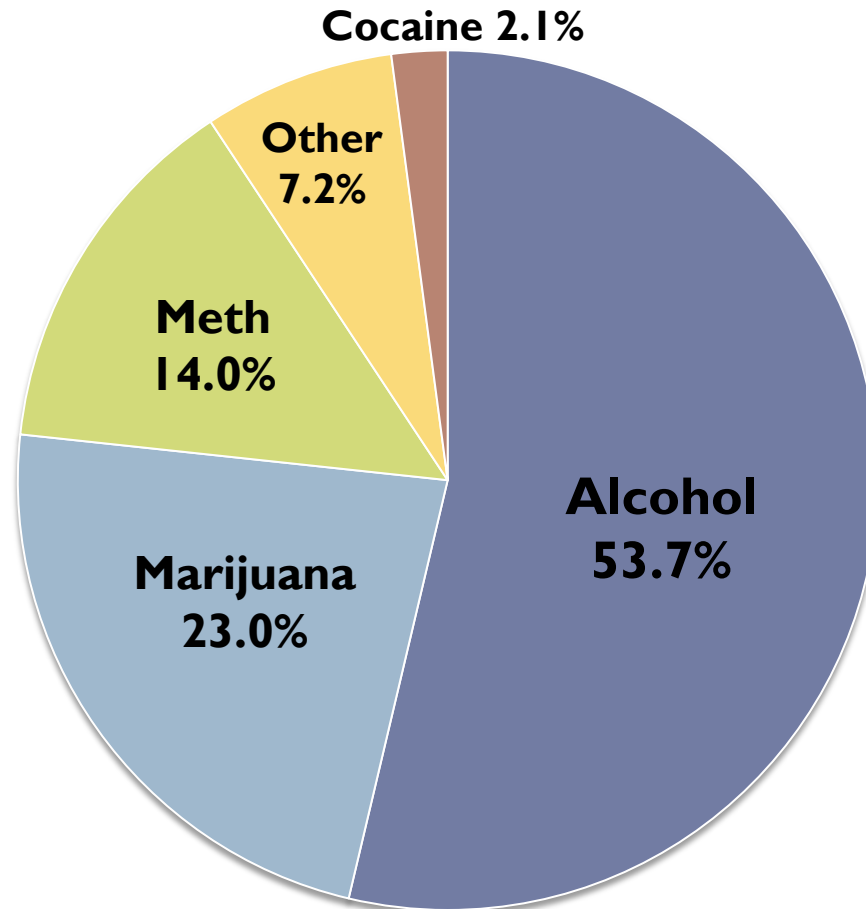
Primary Substance for 5,026 Juveniles in Treatment



IDPH Treatment Admissions, 2014

# Drugs of Choice: Iowa Adults

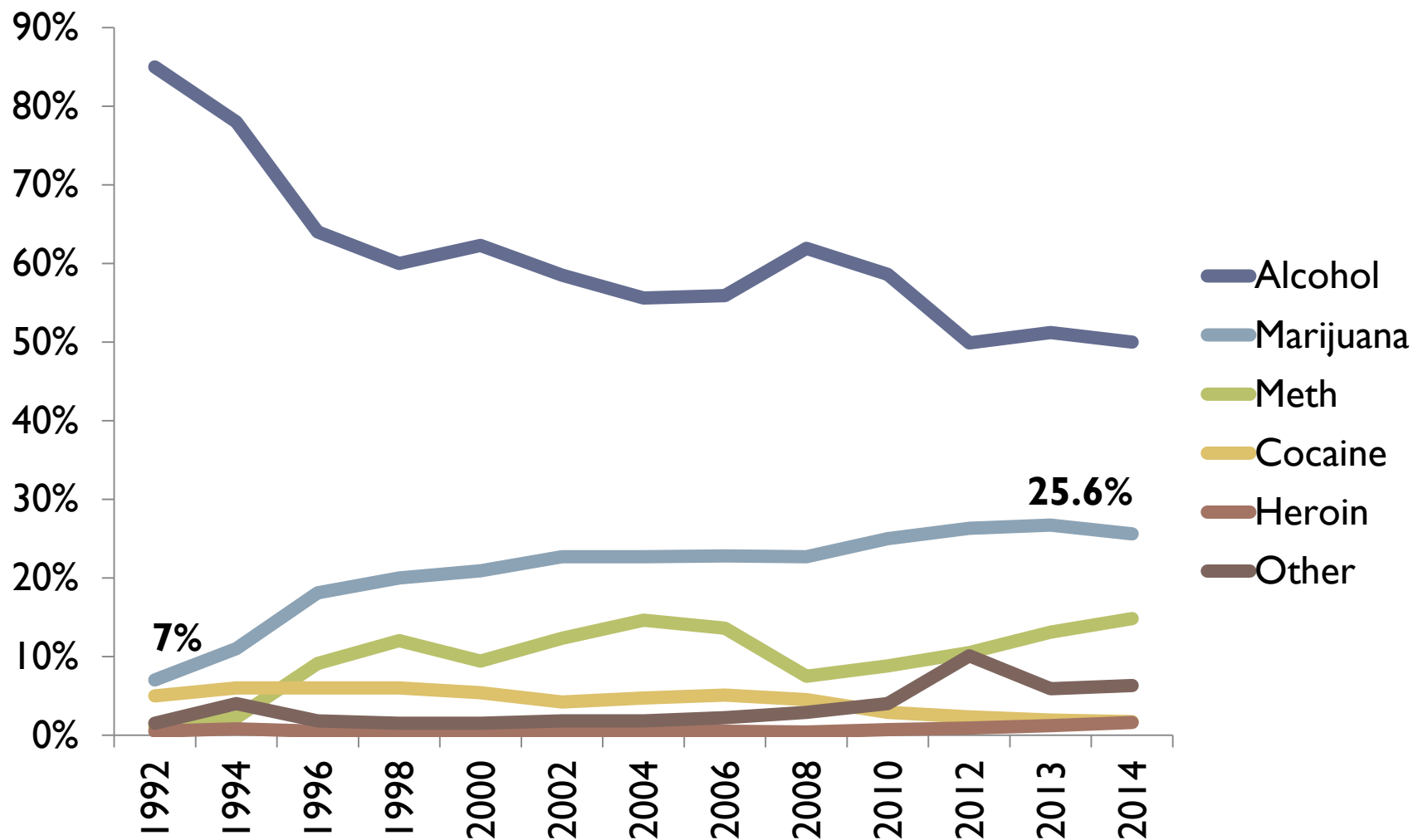
Primary Substance by 46,891 Adults in Treatment



IDPH Treatment Admissions, 2013

# Drugs of Choice: All Iowans

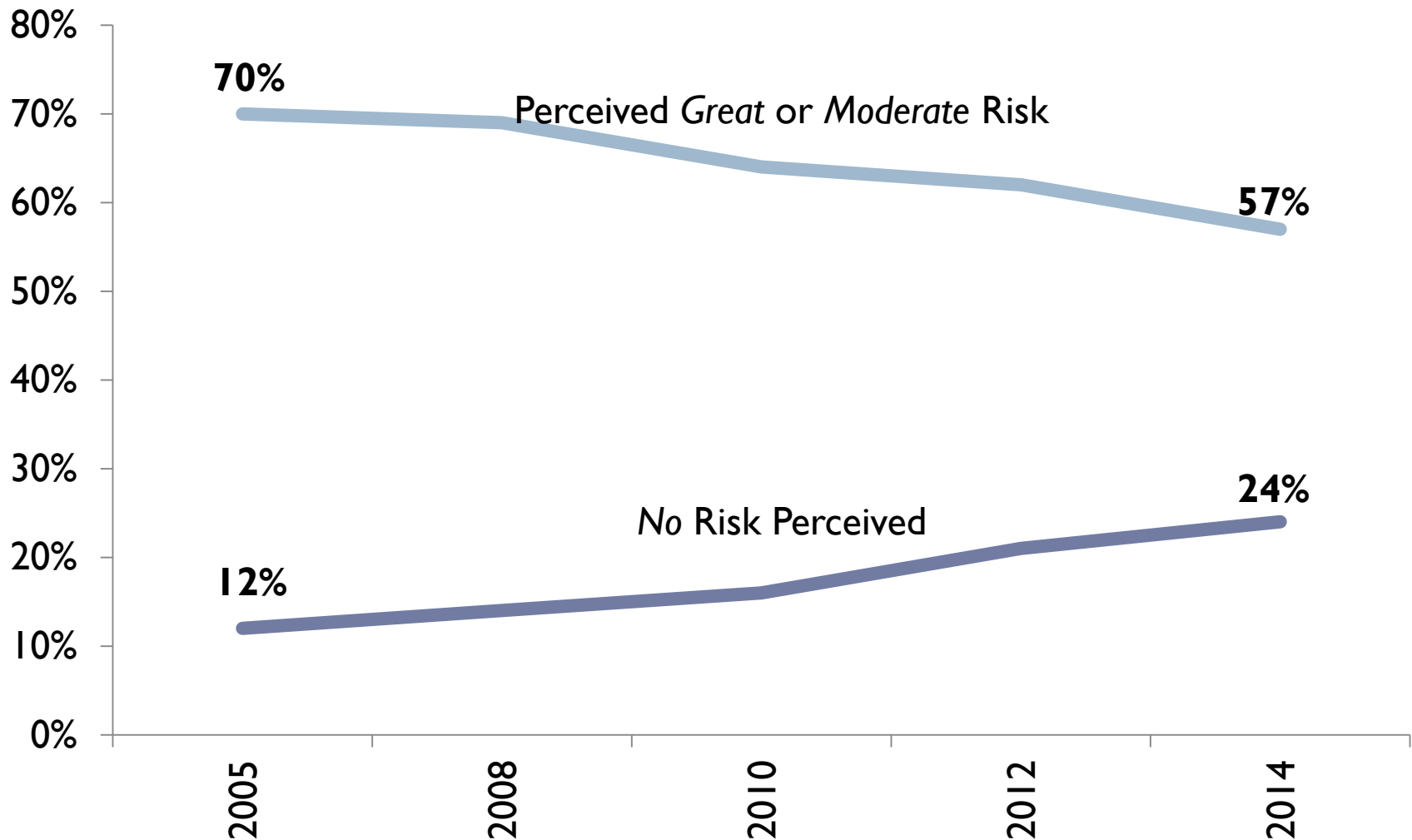
## Primary Substance of Choice by Iowans in Treatment



IDPH Treatment Admissions, 2014

# Marijuana: Perceived Risk

by Iowa 11<sup>th</sup> Graders of Smoking Once or More a Week

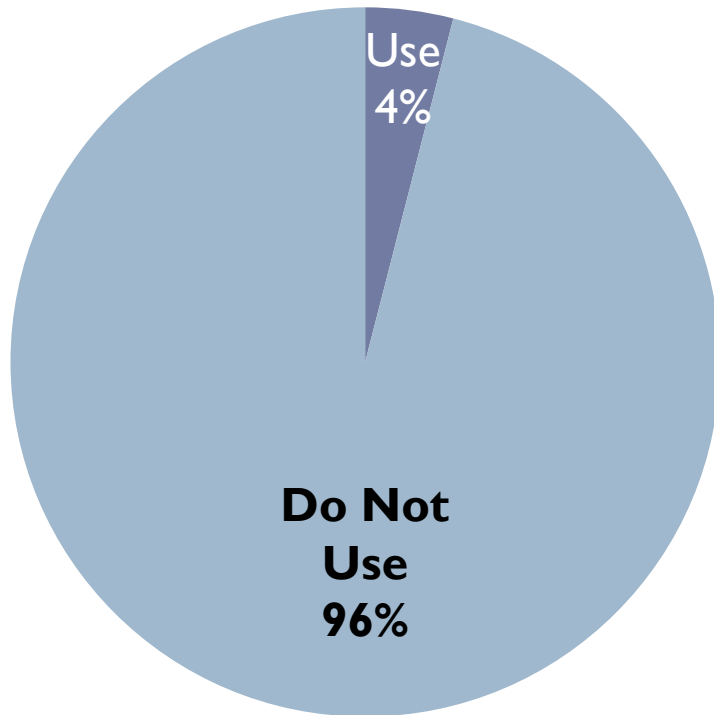


2014 Iowa Youth Survey

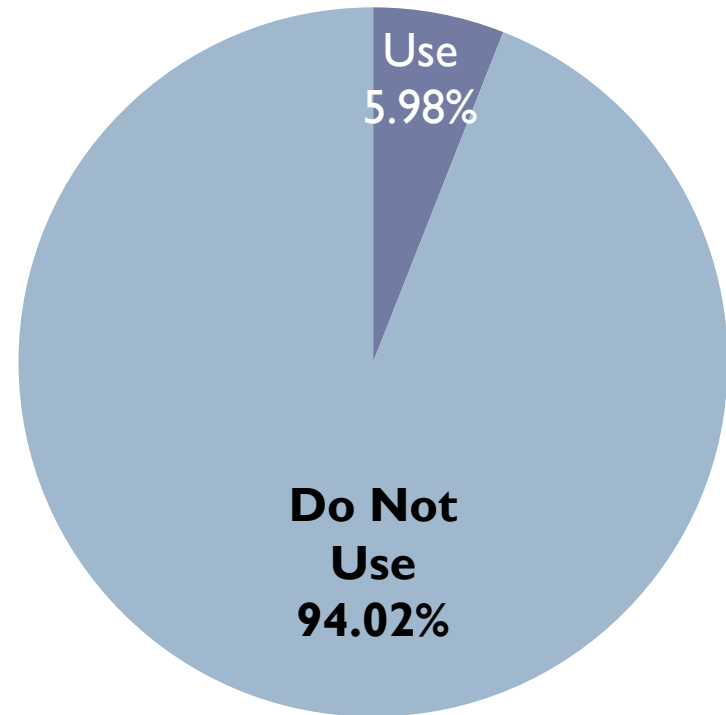
# Iowans' *Current* Marijuana Use

Most Iowans are not *current* marijuana users (past 30 days).

**Iowa 6<sup>th</sup>, 8<sup>th</sup> & 11<sup>th</sup> graders  
currently using marijuana.**



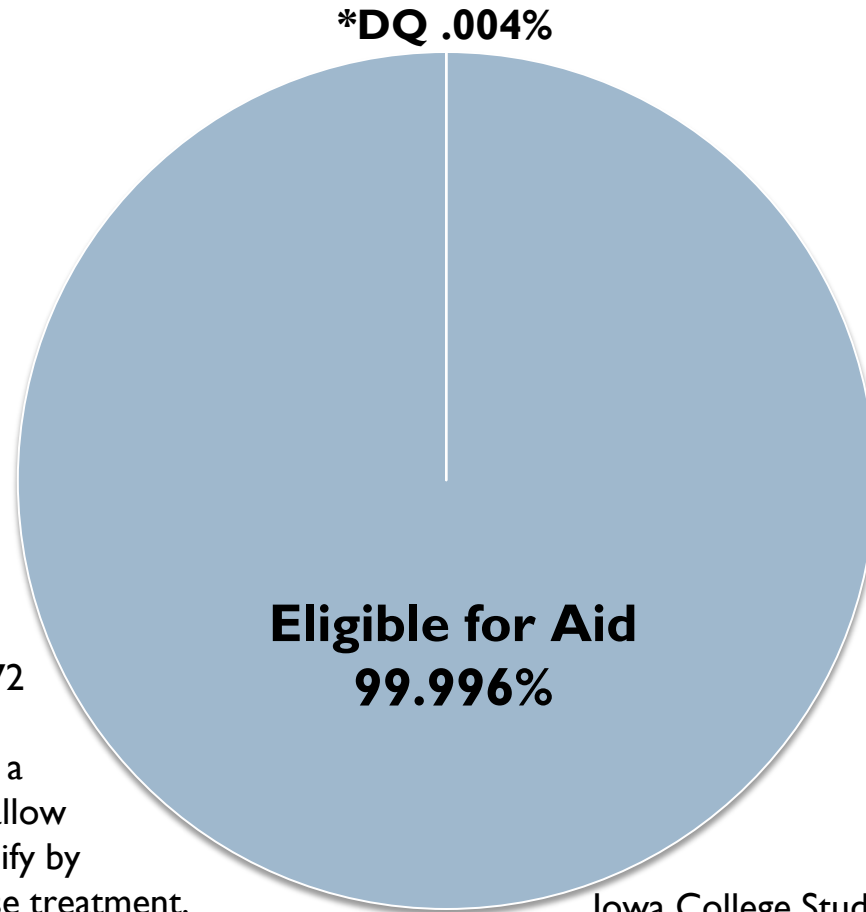
**Iowans 12 & older  
currently using marijuana.**



2014 Iowa Youth Survey & 2012-2013 National Survey on Drug Use & Health

# Iowa College Students Risking Aid Due to Drug Conviction

---



\*In 2013-2014, 7 of 184,872 qualified for suspension of federal financial aid due to a drug conviction. Federal allow permits students to requalify by completing substance abuse treatment.

Iowa College Student Aid Commission, 2014

# 2014 Iowa Prison Admissions

## 1<sup>st</sup> Time Marijuana Possession as Most Serious Offense

---



Of 3,697 total prison admissions:

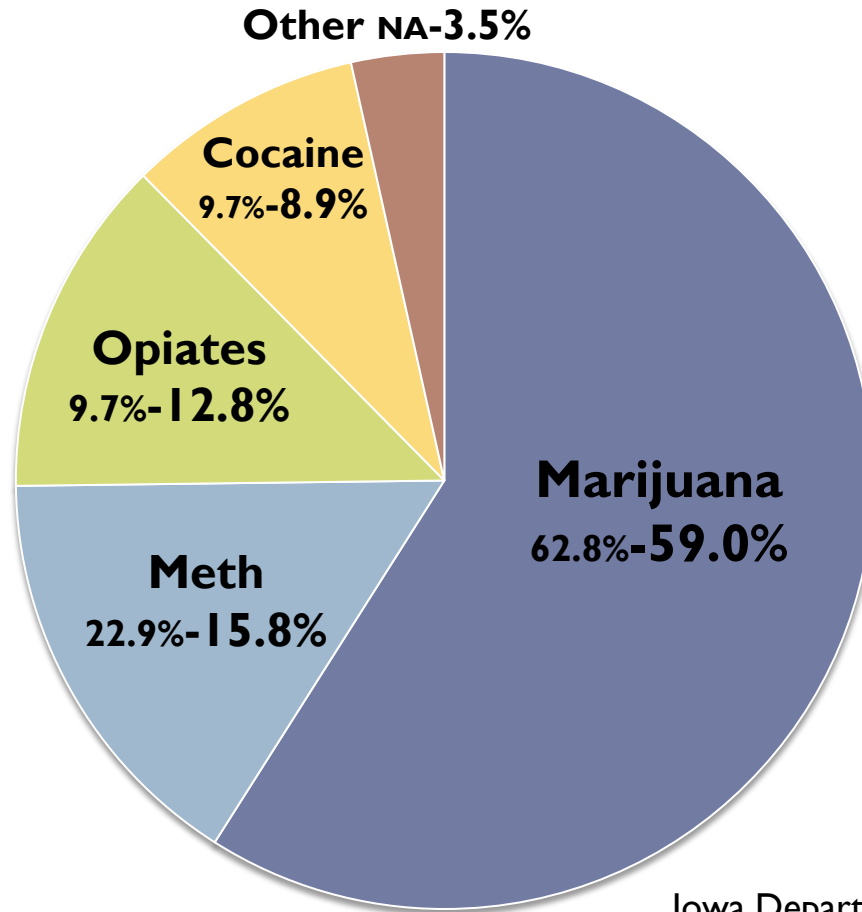
- 160 (4.3%) were for marijuana trafficking,
- 13 (0.35%) were for 3<sup>rd</sup> or subsequent marijuana possession,
- 1 (0.03%) was for 2<sup>nd</sup> or subsequent marijuana possession, and
- None (0%) was for 1<sup>st</sup>-time marijuana possession.

Iowa Department of Corrections, 2014



# Iowa's Workplace

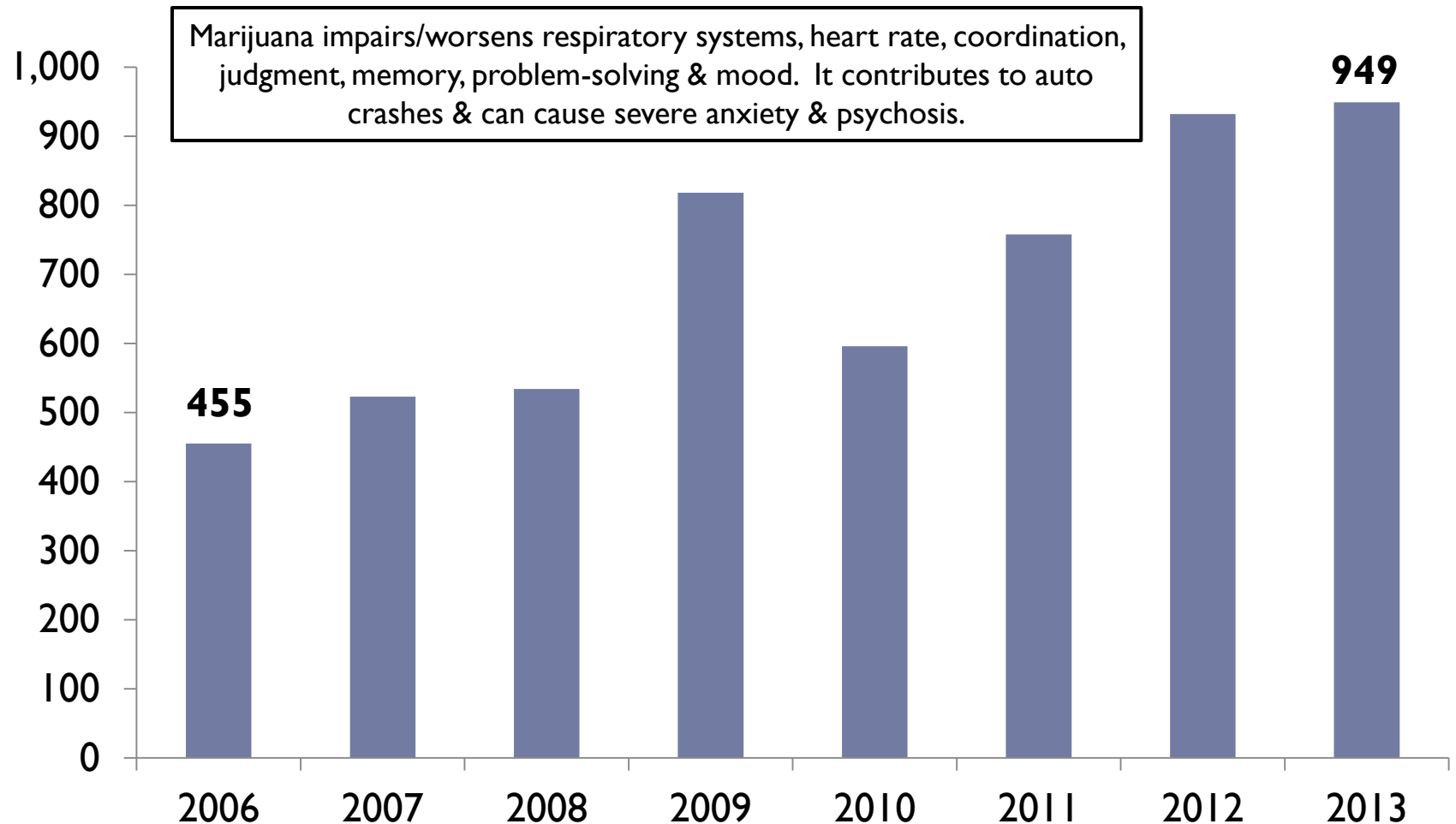
## Positive Drug Tests Reported 2002-2011



Iowa Department of Public Health, 2014

# Iowa Marijuana ER Visits

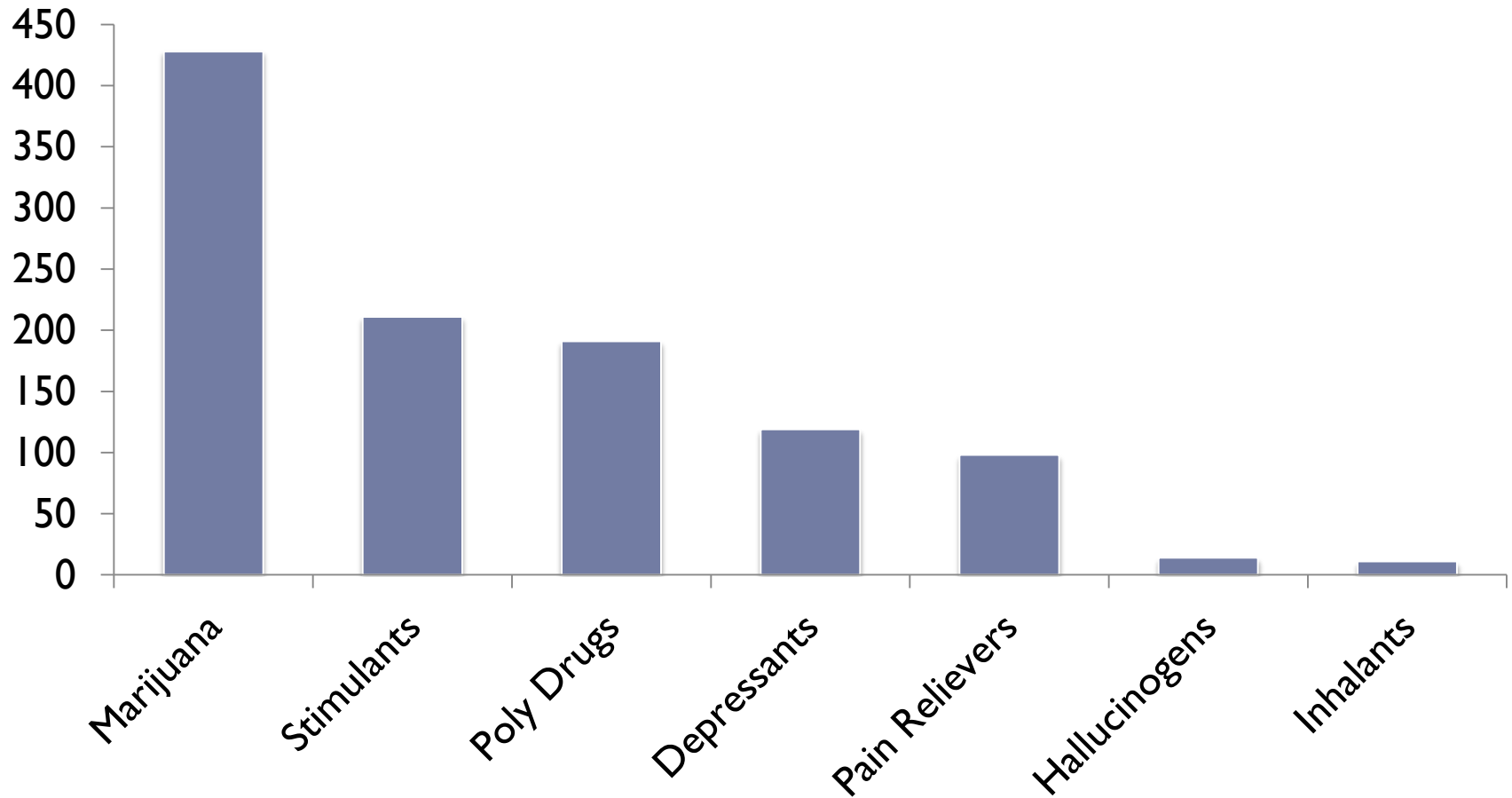
## Marijuana Use as Causal or Contributing Factor



Iowa Department of Public Health, 2013

# Iowa Drug-Impaired Driving

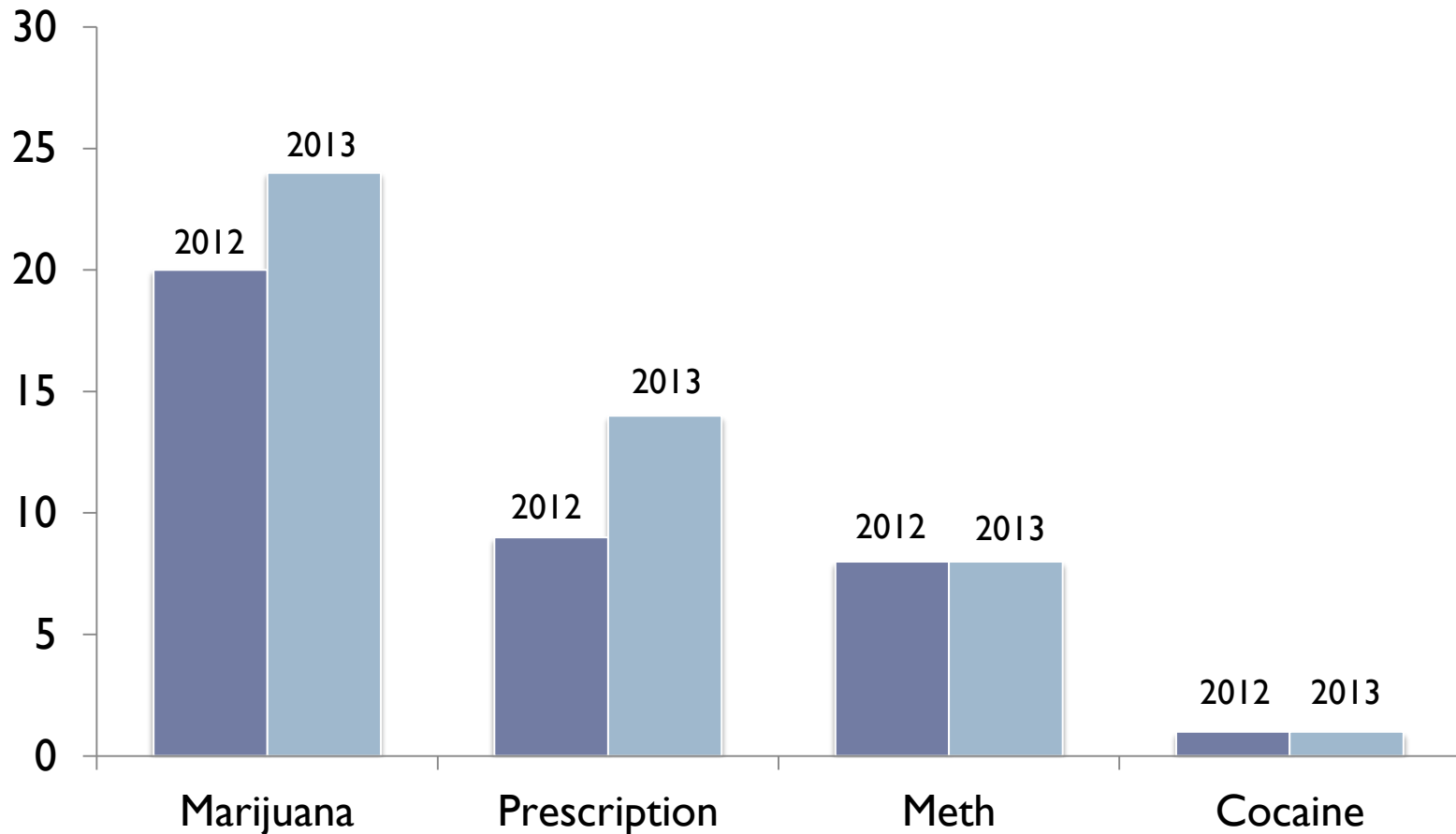
2014 Non-Alcohol Evaluations by Drug Recognition Experts



Iowa Department of Public Safety, 2014

# Iowa Drug-Related Traffic Fatalities

## Types of Drugs Detected in Persons Killed in Crashes



Poly-drug use & drugs mixed with alcohol were detected in some cases. Alcohol alone was detected in 94 other crash victims.

Iowa Departments of Public Safety  
& Transportation, 2014



# “Medical” Marijuana: Case Studies

## Users

---

- A majority of card holders in “medical” marijuana states with data cite pain as their primary illness (vs. cancer, glaucoma, HIV/AIDS & other debilitating conditions.):
  - 65% in Oregon 2012 Oregon Health Authority
  - 71% in Arizona 2012 Arizona Department of Health Services
  - 94% in Colorado 2014 Colorado Department of Health & Environment
- The average age of “medical” marijuana card holders tends to be under 45 years:
  - 41 in Colorado 2012 Colorado Department of Health & Environment
  - 40 in Arizona 2012 Arizona Department of Health Services
  - 32 in California 2011 Journal of Drug Policy Analysis
- 75-80% of “medical” marijuana users seen as patients say marijuana did not ease their pain. 2014 Colorado Springs Dr. Ken Finn, MD

# “Medical” Marijuana: Case Studies

## Diversion (Leakage)

---

- 85% of all “medical” marijuana users in Colorado were registered by 50 physicians, or less than 3% of licensed doctors. 1 physician registered 10% of all users.  
2011 Nussbaum, Boyer & Kondrad-MDs/Colorado Department of Public Health & Environment
- In Oregon, 9 physicians accounted for half of all “medical” marijuana users. One doctor helped 4,180 users in a year, or more than 11/day. 2012 The Oregonian
- 74% of Denver teens in substance abuse treatment say they used someone else’s “medical” marijuana.  
2012 Salomonsen-Sautel, et al., Journal of the American Academy of Child Adolescent Psychiatry
- 34% of 12<sup>th</sup> grade marijuana users in “medical” marijuana states say one of their sources is another person’s “medical” marijuana. 2013 Monitoring the Future Survey/University of Michigan

# “Medical” Marijuana: Case Studies

## Drug Endangered Children

---

- States that decriminalized marijuana saw a 30+% increase in the call rate to poison centers for children requiring medical intervention between 2005 & 2011, while call rates did not change in other states. 2014 Annals of Emergency Medicine
- The average number of Colorado marijuana-related exposures for young children 0-5 was 4.75/year from 2006-2009, but rose 268% to 17.5/year from 2010-2013. 2014 Rocky Mountain Poison & Drug Center
- There's been a spike in the number of Colorado children treated for accidentally consuming marijuana-laced foods & beverages. May 2013 Journal of the American Medical Association Pediatrics

# “Medical” Marijuana: Case Studies

## Impairment & Injury

---

- While total traffic fatalities in Colorado decreased 14.8% from 2007-2012, traffic fatalities involving operators testing positive for marijuana during the same period increased 100%.  
2011 National Highway Transportation Safety Administration & 2012 Rocky Mountain HIDTA
- A six-state study showed the prevalence of marijuana detected in fatally injured drivers increased from 16.6% in 1999 to 28.3% in 2010. 2014 American Journal of Epidemiology, Columbia University
- Colorado marijuana-related hospitalizations increased 82% from 2008 to 2013. 2014 Colorado Hospital Association



# “Medical” Marijuana: Case Studies

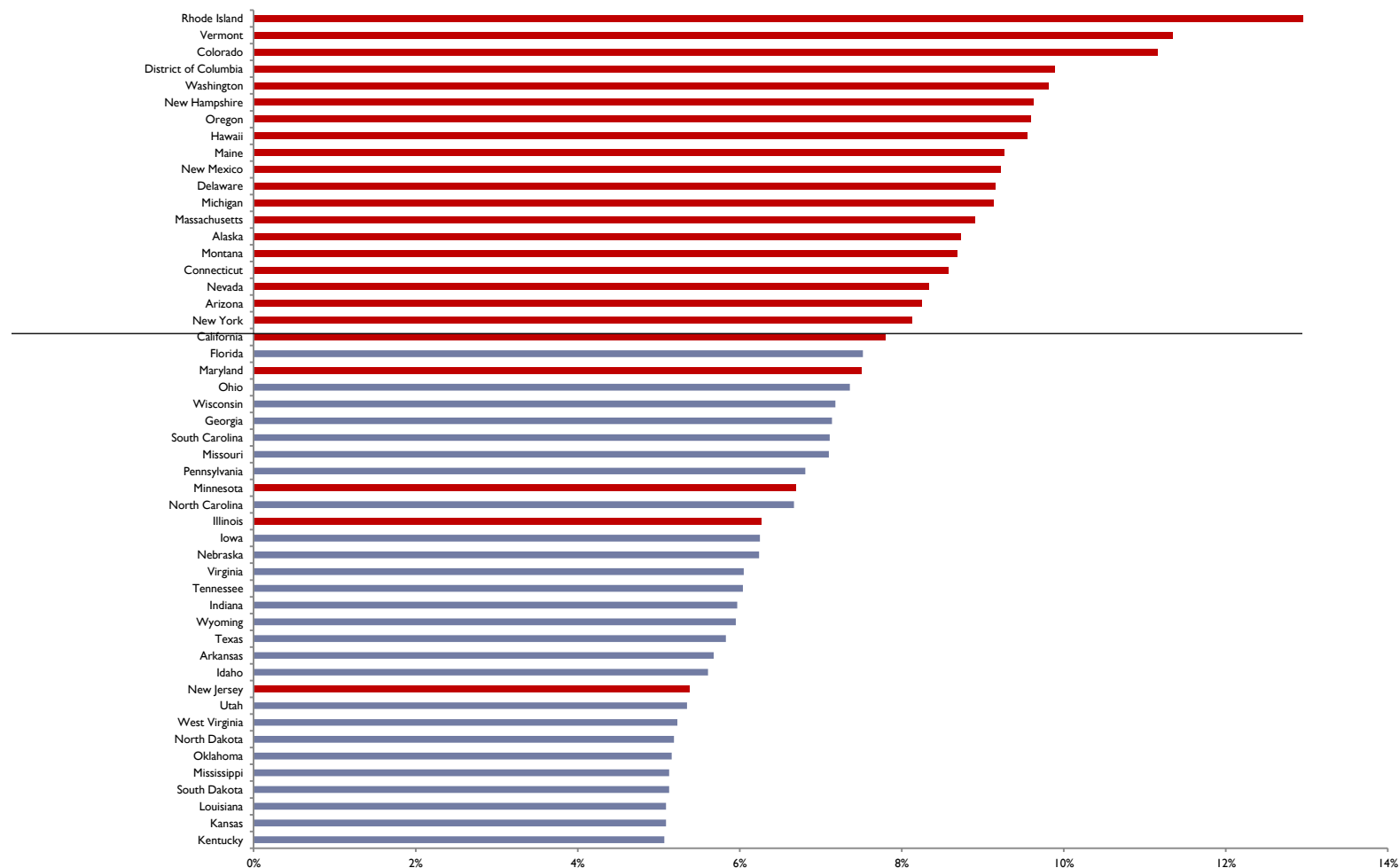
## Use/Abuse

---

- 80% of “medical” marijuana states report increased usage among youths age 12-17 vs. 5 years earlier. 2012 Cerda, M., Drug & Alcohol Dependence
- Residents of “medical” marijuana states had abuse / dependence rates almost twice that of other states. 2011 Wall, M., Annals of Epidemiology
- Colorado & Washington State had the 2<sup>nd</sup> & 3<sup>rd</sup> highest marijuana use rates among persons 12 & older (12.7% & 12.28% respectively vs. 7.4% for the U.S. & 5.98% in Iowa). This happened under “medical” marijuana laws, & a year before full-scale legalization. 2012-2013 National Survey on Drug Use & Health
- The top 20 states (& DC) for current marijuana use among teens all have approved “medical” marijuana. 2012-2013 National Survey on Drug Use & Health

# Current Youth Marijuana Use Rates

## Teens in “Medical” vs. Non-”Medical” Marijuana States



2012-2013 National Survey on Drug Use & Health

# “Medical” Marijuana: Case Studies

## Youth Learning Potential

---

- The top 9 states for marijuana use in high school were all “medical” marijuana states, with an average use rate of 1/4 students (vs. a national rate of 1/5 & an 1/9 Iowa rate).  
2014 Centers for Disease Control, 2013 Colorado Youth Risk Behavior Survey & 2012 Iowa Youth Survey
- Drug-related student suspensions & expulsions increased 32% in Colorado schools from 2008/2009-2012/2013.  
2014 Colorado Department of Education
- School resource officers, counselors, nurses, staff & officials with Colorado schools report an increase in marijuana-related incidents in middle & high schools. November 2013 Denver Post
- Persistent marijuana use during adolescence can cause a long-term 8-point drop in IQ, & harm attention span & memory.  
2012 National Academy of Sciences, Dunedin Study

# “Medical” Marijuana: Case Studies

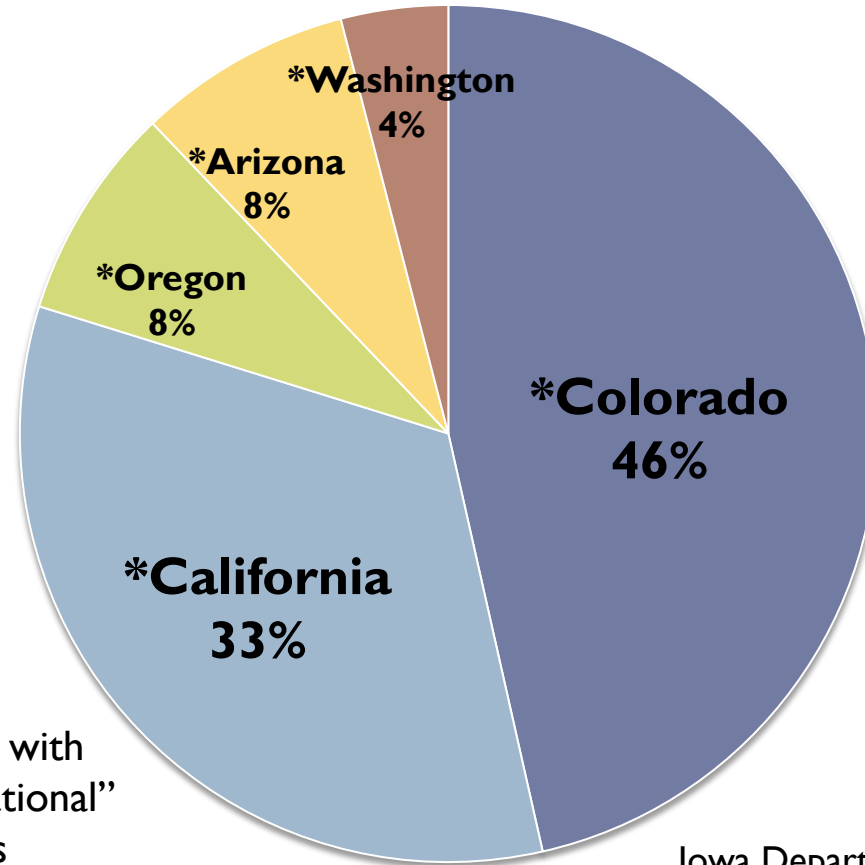
## Diversion

---

- From 2006-2008 Colorado reported 1,000-4,800 “medical” marijuana card holders and no known dispensaries. From 2009 to now, more than 108,000 card holders buy from 532 licensed dispensaries. 2014 Rocky Mountain HIDTA
- Denver has 204 dispensaries, roughly 3 times the number of Starbucks & McDonalds combined. 2012 CBS 60 Minutes
- Highway interdiction seizures of Colorado marijuana destined for 40 other states, including Iowa, increased 397% from 2008-2013. 2014 El Paso Intelligence Center
- Iowa’s Crime Lab reports 26 cases of marijuana oils/waxes & edibles in December 2014-January 2015, & estimates 10% of all recent marijuana submissions are these newer types. January 2015 Iowa Department of Public Safety, Division of Criminal Investigation

# Source of Marijuana Seized in Iowa

2014 Iowa State Patrol Significant Highway Interdictions



\*All 24 from States with  
“Medical” or “Recreational”  
Marijuana Laws

Iowa Department of Public Safety, 2014

# “Personal Use” Marijuana:

## Case Studies

---

- “2 deaths connected with edible marijuana products have Colorado lawmakers scrambling to toughen regulations & experts warning of bizarre behavior as consumers eat powerful pot-infused foods.” May 8, 2014 USA Today
- The family of a 22-year-old Oklahoma man who fatally shot himself in Colorado blames marijuana-infused edibles. A police report says, “he ate 4...gummy bears.” March 26, 2015 Denver Post
- Legalization led to a 356% 1-year rise (356-1,650) in Pueblo County’s homeless shelter population as of March 2014.  
2014 Pueblo County Colorado Sheriff Kirk Taylor
- 3 elementary girls were cited for drug possession on school grounds in Colorado Springs. 1 girl said she brought marijuana from home because “it’s legal & cool.” 2014 KRDO-TV

# “Personal Use” Marijuana:

## Case Studies

---

- Highway interdiction seizures of Colorado marijuana destined for 40 other states, including Iowa, increased 397% from 2008-2013. 2014 El Paso Intelligence Center
- “Visitors account for 44% of ‘recreational’ marijuana sales in the Denver area. In the mountains & other vacation spots, visitors to Colorado account for 90% of ‘recreational’ dispensary traffic. Heavy users consume marijuana much more often, & more intensely, than other consumers.”  
July 9, 2014, Colorado Department of Revenue Market Study
- “7 months after Colorado legalized ‘recreational’ pot, the state has an unexpected problem. It needs to grow more.”  
August 12, 2014, KUSA-TV

# “Personal Use” Marijuana:

## Case Studies

---

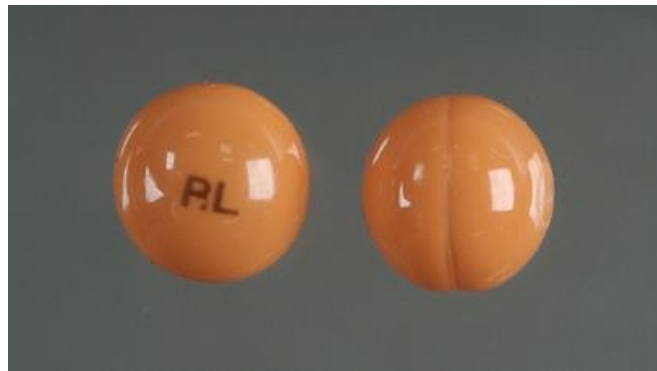
- “This was a bad idea...wait a couple of years.”  
Colorado Governor John Hickenlooper on CNBC 1-23-15
- “It’s not worth it...the criminals are still selling on the black market...we have plenty of cartel activity in Colorado, and plenty of illegal activity that has not decreased at all.”  
Colorado Attorney General Cynthia Coffman in US News 2-23-15
- “Global cannabis use seemed to have decreased. However, in the U.S. the lower perceived risk of cannabis use has led to an increase in its use.” June 26, 2014, UN Office on Drugs & Crime



# “Medical” Marijuana: Alternatives

---

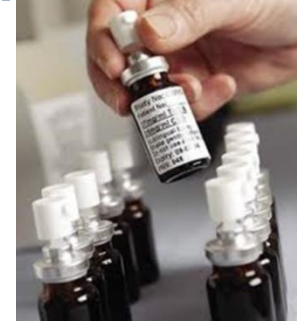
- Research shows a few orally-administered synthetic medicines containing the cannabis plant’s principal psychoactive compound tetrahydrocannabinol (THC) do have therapeutic potential to relieve pain, control nausea, stimulate appetite & decrease ocular pressure. Smoking or ingesting crude marijuana is not required.



- Dronabinol (Marinol) & Nabilone (Cesamet) are FDA-approved & legally available as prescription pills.

# “Medical” Marijuana: Alternatives

- The FDA is considering a mouth spray (Sativex) with 2 cannabinoids extracted from the cannabis plant.
- An oral liquid (Epidiolex) containing non-psychoactive Cannabidiol (CBD), extracted from the cannabis plant, is an FDA orphan drug under study to treat seizures, & available for patient testing, including at University of Iowa Hospitals & Clinics in Iowa City & McFarland Clinic in Ames.
- 16 states, including Iowa, now permit limited use of CBD solutions by patients with severe medical needs.



# “Medical” Marijuana: Alternatives

---

- Many other FDA-approved medicines currently available in dose-specific forms that do not involve marijuana are prescribed & dispensed regularly by health care professionals as safe & effective treatments.
- Research continues on cannabinoids, & other substances, to determine if they may be formulated similar to other medicines for medical use (e.g., morphine from opium, etc.)
- The DEA has not denied any bona fide research application, & the number of authorized researchers is growing. 399 active researchers were registered as of June 2015 to study Schedule I controlled substances. Of these, 265 were studying marijuana & its extracts, including CBD (41 involving human subjects).

# “Medical” Marijuana: Other News

---

- A systematic review & meta-analysis published in the June 2015 Journal of the American Medical Association found most uses of “medical” marijuana would not pass FDA review due to a lack of reliable evidence to support the drug’s use.
- A NIDA study released in June 2015 found using marijuana & alcohol together impacts driving more than using either substance alone.
- The U.S. Senate Drug Caucus held a June 2015 hearing on removing CBD research barriers & said the U.S. Justice Department would analyze CBD for potential medical benefits. The Administration also moved to remove what had been an extra federal requirement for marijuana research.

# Recent Marijuana Research News

---



January 4, 2015

Davenport boy is part of FDA-approved cannabis study



March 24, 2015

Colorado Marijuana Study Finds Legal Weed Contains Potent THC Levels



March 25, 2015

**U.S. Government Awards University of Mississippi \$69 Million to Grow and Analyze Marijuana**

THE WALL STREET JOURNAL.

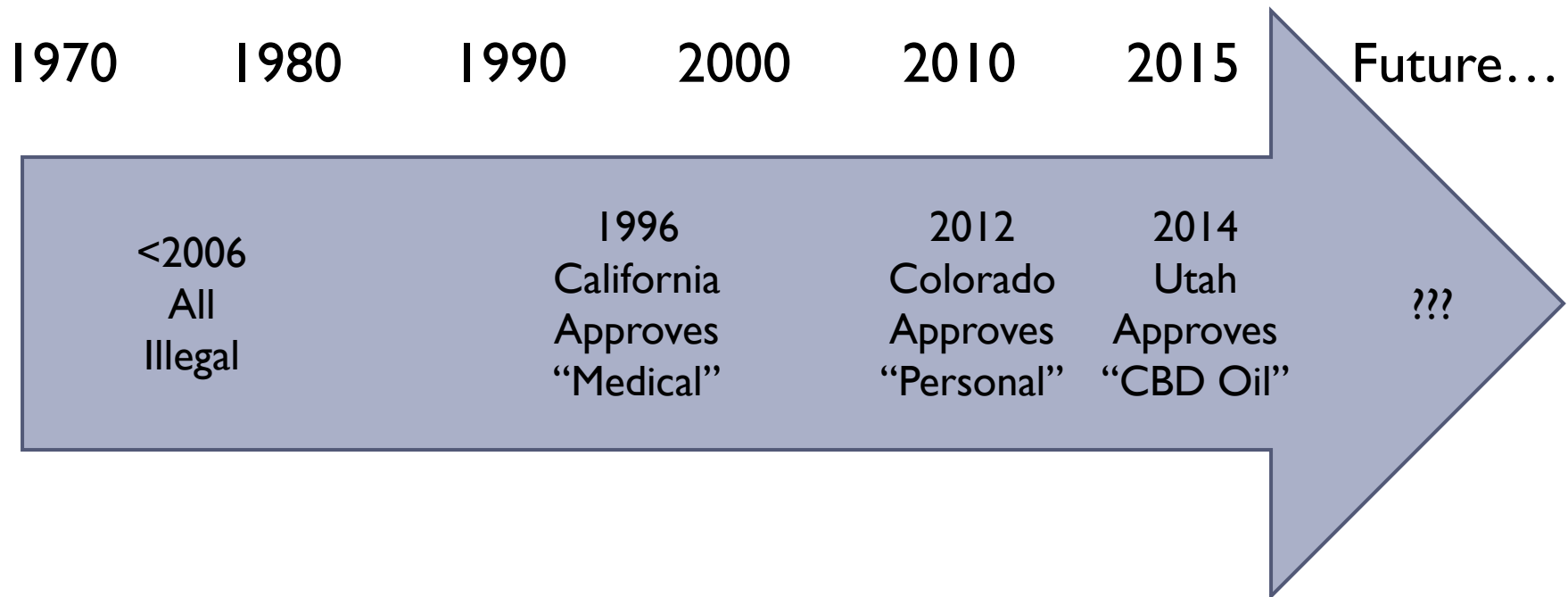
March 23, 2015

**Marijuana Extract for Children With Epilepsy Is Questioned**

As more states move to legalize cannabidiol, early research shows the substance failed help some patients and even worsened others



# U.S. Marijuana Policy Continuum



Changing Attitudes: Quest & compassion for therapy, financial incentives, social justice, privacy concerns, social media/internet, etc.?

Critical Considerations: Medical efficacy, research outcomes, public safety & holistic policy!

# Drug Prevention Info To Go...

---

- Drug use is a preventable behavior, & drug addiction is a treatable disease. Key influencers do make a difference.
- Teens who learn about drug dangers through ongoing dialogue at home are up to 50% less likely to ever use them.
- A frequent reason cited by drug free teens for deciding to not use drugs is the fear of disappointing their parents.

---

# Share the News & Stay Safe!

Iowa Office of Drug Control Policy  
**[www.Iowa.Gov/ODCP](http://www.Iowa.Gov/ODCP)**

